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ABSTRACT

This report is the second in a series of studies on the serious threat toxic chemical use may pose to the health of Vermont's children, teachers, and school staff. The first report, "Toxic Chemical Exposure in Schools: Our Children at Risk," provided an overview of the problem of poor indoor air quality (IAQ) in schools and discussed sources of indoor air pollution (pesticides, cleaning products, etc.). Of the sources of toxic chemical exposure, pesticides and maintenance chemicals potentially pose the most serious threat to the health of students, teachers, and school staff. Parts 1 and 2 of this report outline the health effects of exposure to toxic pesticides and maintenance chemicals. Part 3 discusses the numerous short- and long-term impacts these chemicals may have on a child's physiological development. Part 4 presents the results of a School Pesticide & Maintenance Chemical Use Questionnaire. Part 5 offers some possible solutions concerned parents, teachers, children, and school officials may take to remove these chemicals from the classrooms. (Appendices contain the methodology and survey, recommendations by the New York Board of Regents, and resources for further information. Contains 35 references.) (EV)

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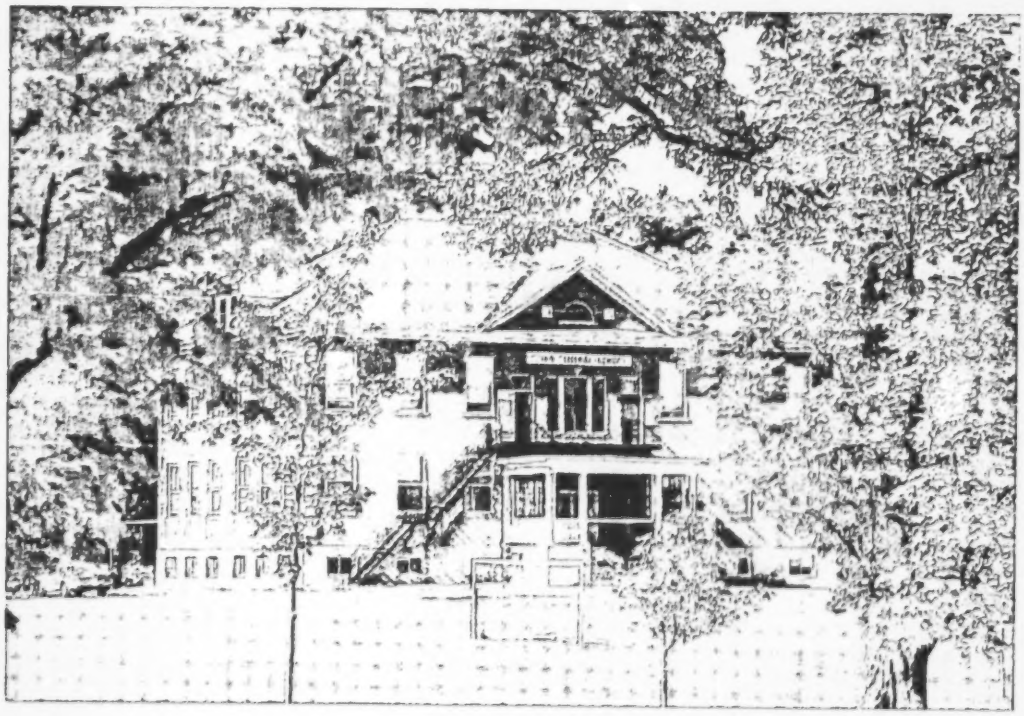

PESTICIDES AND MAINTENANCE CHEMICALS IN VERMONT SCHOOLS

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CHEMICALS IN VERMONT'S CLASSROOMS

PESTICIDES AND MAINTENANCE CHEMICALS IN VERMONT SCHOOLS

Written by Peter Sterling, October, 1998
Revised by Brigid Browning, January, 1999

Acknowledgements

VPIRG wishes to thank the schools that took the time to respond to our School Pesticide and Maintenance Chemical Use Questionnaire. The information gathered and presented in this report highlights the potential danger posed from the use of pesticides and other toxic chemicals in schools. In doing so, it is not VPIRG's intention to cast a negative light on any particular school or to suggest that any school officials are unconcerned about the health of their students, teachers and staff. Vermont schools, like the rest of us, are victims of our society's dependence on toxic chemicals. This report is meant to begin the process through which school officials, teachers, students, parents and policy makers can work together to find solutions to this problem.

VPIRG would also like to thank Anthony Pollina and Emma Mulvaney-Stanak for their work on this report and to acknowledge the W. Alton Jones Foundation, the Consumer Research Council, the U.S. Environmental Protection Agency and the John Merck Fund for their support.

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About Vermont Public Interest Research Group and Vermont Public Interest Research and Education Fund

As Vermont's largest citizen-based advocacy organization, VPIRG is protecting consumer interests, preserving Vermont's environment, and keeping our government accountable. VPIRG combines public education, grassroots organizing, legislative lobbying and research efforts toward meeting these goals. VPIRG was founded in 1972 and has since grown to include 20,000 members across the state. The Vermont Public Interest Research and Education Fund is the research and education arm of VPIRG.

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Summary

Our society has increased its use of pesticides by over 50 percent in the last 30 years.[1] This over-reliance on toxic chemicals has led to a myriad of public health problems including tainted drinking water, air pollution and increased illnesses in humans. Children in particular are at great risk from toxic chemicals due to their play habits and the incomplete development of their immune systems. In addition, while children are exposed to the same amount of toxic chemicals through food, water and air as adults, they have less body mass to break down and absorb contaminants. Since children spend much of their time on schoolgrounds, a school that uses pesticides and toxic maintenance chemicals may represent a major portion of a child's total exposure to these toxins. In recent years there have been numerous examples from throughout the United States of children suffering acute and chronic health effects due to toxic chemical exposure while at school.

Vermont's schools are not immune to this epidemic. To further study the extent of this problem, VPIRG sent a School Pesticide & Maintenance Chemical Use Questionnaire to ten randomly selected schools in each of Vermont's 13 counties (See Appendix 1). VPIRG received completed questionnaires from 32 schools.

Of the schools responding:

- 75 percent use pesticides monthly;
- 65 percent use a pesticide that research shows causes adverse human health effects;
- 94 percent do not post signs or warn students before application of pesticides;
- 87 percent do not post signs or warn students after application of pesticides;
- No school had a written pesticide-use policy or pesticide-use notification policy for parents;
- 88 percent indicated they use a maintenance chemical that research shows is known to cause adverse human health effects; and
- 89 percent indicated that they would be willing to use non-toxic maintenance supplies if they were available at competitive prices.

To protect Vermont's children and school staff from the hazards of pesticide exposure, VPIRG is advocating:

- ✓ A Healthy School Coordinator be assigned for each school.
- ✓ School officials with the Healthy School Coordinator and if necessary the Department of Education assess each school's pesticide and toxic chemical use.
- ✓ A phase-out of pesticide use in all schools by the year 2002. Until such time, schools should use Integrated Pest Management (IPM) methods to reduce reliance on pesticides.
- ✓ A statewide Safe Materials Policy for schools. Such a policy would dictate schools use non-toxic or least toxic office and classroom supplies, maintenance and cleaning chemicals, building equipment and materials and furnishings and floorings.
- ✓ State assistance in the identification of non-toxic alternatives and coordinated purchasing.

Introduction

Vermont's schools are dependent on many common products containing toxic chemicals. While the health threats posed by the widespread use of these chemicals has received increasing scrutiny from parents, teachers and school officials, we need further action to make our schools safe.

This report is the second in a series of VPIRG studies on the serious threat toxic chemical use poses to the health of Vermont's children, teachers and school staff. The first report, *Toxic Chemical Exposure in Schools: Our Children at Risk*, provided an overview of the problem of poor indoor air quality (IAQ) in schools and discussed sources of indoor air pollution (pesticides, cleaning products, etc.).

Of the sources of toxic chemical exposure, pesticides and maintenance chemicals potentially pose the most serious threat to the health of students, teachers and school staff. Part 1 and 2 of this report outline the health effects of exposure to toxic pesticides and maintenance chemicals. Part 3 discusses the numerous short and long-term impacts these chemicals may have on a child's physiological development. In Part 4 we present the results of our School Pesticide & Maintenance Chemical Use Questionnaire. Part 5 offers some possible solutions concerned parents, teachers, children and school officials may take to remove these chemicals from the classrooms.

We hope this report will provide concerned citizens with the information necessary to remove toxic chemicals from Vermont's schools and provide a safe and healthy learning environment for our children.

1. Pesticide Use in Schools

> When pesticides are applied in places such as schools, the public may not be aware of their use, and may be exposed to pesticides without their knowledge and against their will.
>
> The U.S. General Accounting Office [2]

Recently, throughout the United States, parents, school officials and others have become increasingly concerned over excessive pesticide use. A 1996 Massachusetts Public Interest Research Group (MassPIRG) survey found that over 80 percent of the responding schools used pesticides monthly and only 15 percent of these schools posted treated areas after application.[3] A similar California PIRG study done earlier this year found that 87 percent of the responding school districts reported using pesticides that can cause cancer, affect the reproductive system, mimic the hormone (endocrine) system or act as nerve toxins.[4] A 1993 study by the New York Attorney General's Environmental Protection Bureau found that 87 percent of the state's schools use pesticides while only 3 percent provided notification before spraying.[5] In addition, at least 50 different active pesticidal ingredients were routinely applied to the buildings and grounds of New York schools. These applications may lead to poisonings: according to the U.S. Environmental Protection Agency (EPA), at least 2,766 pesticide poisoning incidents occurred in schools from 1985-1992.[6]

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Health Effects of Pesticides

The term "pesticide" is used to refer to substances deliberately used to kill living things including weeds (herbicides), rodents (rodenticides), fungus (fungicides) and insects (insecticides). The U.S. EPA has officially stated that no pesticide can be considered safe.[7] There are over 1,500 such pesticides in use in the U.S., many of which are blended together to produce over 50,000 commercial pesticide products. Only 10 percent of these products have been evaluated for health effects.[8] Commercial pesticides are composed of both active and inert ingredients. Active ingredients are the chemicals used to kill the target pest and must be listed in a warning on the product's label. Inert ingredients – which form the solution, dust or granule containing the active ingredient may constitute 99 percent of the product's volume. These chemicals are not required to be listed individually on the warning label though the EPA has found 75 inert ingredients are "potentially toxic" and another eight are "of toxicological concern". These concerns have the led the EPA to "strongly encourage registrants to substitute or remove" these products from pesticides.[9] In addition, there are at least 382 chemicals on the U.S. EPA list of pesticide inert ingredients that are currently, or once were, registered as active pesticide ingredients.[10]

Pesticides are known to have both short and long-term effects on human health. Short-term or acute effects occur shortly after being exposed to a toxin. Acute affects include headaches, nausea, vomiting and eye and skin irritation. Long-term or chronic impacts may occur many years after exposure or be the result of repeated exposures over many years. While it is harder to specifically trace the chronic effects of chemicals, pesticides have been linked to cancer, birth defects and reproductive damage. Recent studies have also identified pesticides, such as 2,4-D, as hormone mimicking chemicals called endocrine disruptors.[11] These chemicals mimic the role of natural hormones in the human body and may cause disruption to the reproductive system and a variety of birth defects. According to the U.S. EPA, "All pesticides are toxic to some degree. This means they can pose some risk to you, to your children and pets...".[12]

Pesticides exposure is also known to affect the cognitive and motor skills of students. The U.S. Office of Technology Assessment reports:

> In general [human health] research demonstrates that pesticide poisoning can lead to poor performance on tests involving intellectual functioning, academic skills, abstraction, flexibility of thought and motor skills; memory disturbances and inability to focus attention; deficits in intelligence, reaction time and manual dexterity; and reduced perceptual speed.[13]

Table 1 lists pesticides commonly used in schools and their known health effects.

Table 1: Pesticides Commonly Used on School Grounds

Product Name	Type of Pesticide	Sample Target Pests	Known Health Effects
Acephate	Insecticide	Cockroaches and ants.	Headache, flu-like symptoms, cancer, reproductive disruption and irritation to nervous system.
Bendiocarb (Ficam)	Insecticide	Ants, fleas, ticks, cockroaches, silverfish and crickets.	Diarrhea, muscle weakness, dizziness, headache, blurred vision, spasms, sweating and sensory and behavioral disruption.
Chlorpyrifos	Insecticide	Ants, termites, fleas, cockroaches and mosquitoes.	Headache, nausea, dizziness, abdominal cramps, vision impairment, weight loss, vertigo, convulsions, toxic psychosis, drowsiness, twitching muscles, mental confusion and peripheral neuropathy.
Cypermethin	Insecticide	Ants and cockroaches.	Allergic dermatitis and flu-like symptoms.
2,4-D	Herbicide	Broadleaf weeds	Vomiting, diarrhea, anorexia, ulcers, damage to liver and kidney and nervous system damage.
Dicambra	Herbicide	Broadleaf weeds	Skin irritation, vomiting, coughing, dizziness, sensory and behavioral disruption, spasms and sweating.
MCPP (Mecoprop)	Herbicide	Broadleaf weeds	Skin irritation, vomiting, coughing, dizziness, sensory and behavioral disruption, spasms and sweating.

Source: *Pesticides in Schools: Reducing the Risks*, New York State Board of Regents' Advisory Committee on Environmental Quality of Schools, February 1996.

While some schools may make efforts to spray pesticides after school or on weekends, contaminants may remain in the air or on the ground several days after application. In a study on chlorpyrifos, the most commonly used pesticide in the U.S., the Occupational Health Group found it will remain in the applied area for up to two days and recommended that occupants not enter the building for 24 hours after application.[14] A separate study on chlorpyrifos use in homes revealed levels of 6-21 times the recommended "safe" dose for one week after application as it settled out of the air and onto various surfaces, including children's toys.[15]

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Medical research has shown that people react differently to the numerous chemical compounds in pesticides and other common products such as cleaning solvents, detergents and glues. Through repeated low-level exposure to these chemicals, a person may develop multiple chemical sensitivity (MCS). The symptoms of MCS include fatigue, severe migraine-like headaches, nausea, that "run down" feeling, rashes, itching, swelling, pain, stuffiness, disorientation and dizziness. Between 2 percent and 10 percent of the general population currently suffers from multiple chemical sensitivity, and the number appears to be growing.[16] Physicians studying MCS conclude that the condition has something to do with a person's immune system; a person inherits an immune system that is not fully functional, or a healthy immune system is harmed by chemical exposure and thereafter reacts strongly to additional chemical exposures. Unfortunately, it is often difficult to accurately diagnose MCS, particularly in young children who are less able than adults to articulate their symptoms.

Vermont Laws Governing Pesticide Use

Vermont has few laws governing the actual application of pesticides. Currently, the state requires all public non-residential areas, such as parks or playing fields, be posted while the spraying is going on and for 24 hours after application. The only areas where prior notification of pesticide use is required are along utility and railroad rights-of-way and on golf courses. Vermont has no state law specifically governing pesticide applications on schoolgrounds. The state also has no staff person assigned to monitoring pesticides applied on schoolgrounds. However, in 1997 the Vermont Department of Agriculture did mail to all schools the U.S. EPA's *Pest Control in the School Environment: Adopting Integrated Pest Management* along with a cover letter detailing the problem of pesticide use in schools. The letter states:

> The public's concern about health and environmental risks associated with pesticides are increasing, particularly when children are involved. As the public becomes more aware of the health and environmental risks pesticides may pose, its interest in safe and judicious pest control methods increases… It is in everyone's best interest to reduce potential exposure of school children to pesticides.[17]

The City of Burlington passed what many regard as a model law in 1992 which requires special permission to apply pesticides around schools, child care centers and day care homes. The law also requires posting of any area to be sprayed 24 hours in advance and for the posting to remain for at least 24 hours after application. In addition, adjoining landowners (within 200 feet of the parcel to be sprayed) must receive advance notification of application of pesticides. In passing the law, the City Council went as far as to say"

> [R]elatively little is known about pesticides' long-term effects upon humans and the environment. In light of this uncertainty, the City of Burlington considers all pesticides detrimental to human health unless proven otherwise.[18]

2. Toxic Maintenance Chemicals in Schools

Toxic chemicals are often used in cleaning products due to their ability to dissolve substances and evaporate quickly. One typical set of toxic cleaning products used in and around schools are chlorine-based cleaners, scouring powders and bleach. Once in the

environment, chlorine may react with other materials to form a dangerous class of chemicals called organochlorines which are known to cause reproductive, endocrine and immune system disorders.[19] Other toxic cleaning products include disinfectants, drain cleaner, floor and furniture polish, rug and upholstery cleaner, toilet cleaners and glass cleaners.

Organic solvents can easily enter the human body as they evaporate in air at room temperature and may easily penetrate the skin. Many degreasers and other liquid cleaners contain organic solvents which may cause several health problems including childhood cancer and birth defects as well as adverse reproductive effects such as spontaneous abortion.[20] The glycol ether family of solvents may cause lower sperm counts, testicular damage, prolonged pregnancy and birth defects in the heart kidney and urinary system.[21] Other common solvents include aromatic hydrocarbons and chlorinated derivatives.

The procurement of cleaning products is generally based on the cost and efficacy of a given product and not the possibility of adverse health effects. Table 2 lists maintenance chemicals commonly used in schools and their known health effects.

Table 2: Toxic Cleaning Supplies

Type of Cleaning Product	**Toxic Chemical Ingredient**	**Known Health Effects**
Ammonia-Based Cleaners	Ammonia and Ethanol	An irritant and causes burns
Floor and Furniture Polish	Diethylene Glycol, Nitrobenzene and Petroleum Distillates	Carcinogenic
Rug and Upholstery Cleaners	Diethylene Glycol, Napthalene, Oxalic Acid and Perchloroethylene	An irritant and causes burns
Toilet Cleaners	Calcium Hypochlorite, Muriatic Acid and Oxalic Acid	An irritant and causes burns
Window Cleaners	Butyl Cellosive, Diethanolamine, Ethylene Glycol, Kerosene, Methanol, Naphtha, Propylene Glycol, Stoddard Solvent, Toluene and Xylene	An eye, skin and throat irritant

Source: *Stepping Lightly on the Earth: A Minimum Impact Guide to the Home*, Greenpeace Action, 1995.

3. Vulnerability of Children to Toxic Poisoning

Children are at greater risk of poisoning from the toxics in pesticides and maintenance chemicals than adults because of their developing bodies and their behavior and activities while at school and at play.[22] While children are exposed to the same amount of these chemicals as adults, through food, water and air, they have less body mass to break down and absorb the contaminant. A child's metabolic system is also unable to break down and excrete many toxic substances, increasing the likelihood of immune system impairment, neurological problems and cancer.[23] Children are more inclined to engage in hand to mouth activity, lie on carpets or roll in the grass, increasing the

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chances of being exposed to toxic chemicals. Children are also curious and may explore schoolgrounds, often placing them in contact with toxic chemicals.[24] The damage from any exposure is compounded by the fact that many toxic chemicals may hurt the developing tissue of growing bodies more severely than that of the adults due to their increased cell division, increased metabolic and respiratory rates, and developing immune system.[25] Moreover, the Washington State Department states that although children may be affected to a greater degree than adults, the younger age groups in particular are less likely to comprehend and clearly communicate their discomfort or adverse health effects than adults.

4. Survey Results

Pesticides

VPIRG's survey revealed that pesticides are commonly applied throughout school grounds in areas such as bathrooms, gyms, classrooms, playing fields and cafeterias. In fact, 75 percent of schools use pesticides monthly. Of the schools that apply pesticides, 65 percent use a pesticide that research shows causes adverse human health effects.

Unfortunately, few precautions are taken to keep schoolchildren away from areas treated with pesticides: 94 percent of schools do not post signs or warn students before application of pesticides and 87 percent do not post signs or warn students after the application of pesticides.

No school had a written pesticide-use policy or pesticide notification policy for parents. Alarmingly, 58 percent of the schools that use pesticides keep no records of their use. In addition, 30 percent of the schools that use pesticides apply them on a fixed schedule whether there is a pesticide problem or not.

The three most common pesticides used in Vermont's schools are chlorpyrifos, glysophate and diazinon. All of which are known to have adverse health effects on adults and children.

- Chlorpyrifos, also called Dursban, has been known to cause headaches, dizziness, vomiting and birth defects.[26] Nearly 11,000 children under the age of five were reported to have been exposed to dangerous levels of chlorpyrifos from 1985-1992 according to the Poison Control Center.[27] A fifth of an ounce of chlorpyrifos is sufficient to kill an adult.[28]
- Glysophate, also called Round Up, has been linked to eye and skin irritation, vomiting and diarrhea and is known to drift as far as 1,300 feet downwind after application.[29]
- Diazinon has been proven to cause numerous long-term health impacts including pulmonary edema and muscle weakness. After hundreds of birds were killed due to diazinon poisoning, the EPA banned its use on golf courses and sod farms.[30]

Maintenance Chemicals

Of the 16 Vermont schools that reported using maintenance chemicals, 14 (or 88 percent) indicated they use chemicals known to cause adverse human health effects (Table 2). The

most prevalent chemicals used were ethanol, ammonia and the glycol ether family of solvents which include propylene glycol phenyl ether and diethylene glycol ether.

Of the schools responding, 83 percent indicated they currently use some products they consider to be non-toxic, though this term was not clearly defined in the survey. Three schools indicated they have a policy encouraging the use of non-toxic maintenance supplies and 89 percent indicated that they would use non-toxic maintenance supplies if available at competitive prices.

Three schools said that they have children known to be especially sensitive to chemicals, but none indicated that they take measures to notify, identify and protect these children from chemical exposure. Overall, 59 percent of the schools said they were able to identify these children.

According to survey results, 93 percent of Vermont's schools indicated they keep Material Safety Data Sheets (MSDS) on file for each toxic chemical they use. MSDS's are required by law to contain important information on chemicals such as their ingredients, spill and leak procedures and special precautions.

5. Solutions and Recommendations

A healthy school contributes favorably to a sound learning environment for students, increased productivity for teachers and staff and a sense of comfort, health, and wellbeing for school occupants. Further, a healthy school environment makes it less likely that students and staff will be sick; makes it more likely that when at school, students and staff will be more alert and productive; increases control over children's learning environment; increases job satisfaction; and reduces risk of litigation.

To solve the problem of toxic chemical exposure in our schools, we must make sure that schools are 1) not using toxic materials in the first place and 2) isolating those toxic materials that cannot be removed.

Following are some recommendations for parents, policy-makers and school officials for making Vermont schools safer learning environments.

Safe Materials Policy

The Department of Education in cooperation with the Department of Health and the Agency of Natural Resources should develop a Safe Materials Policy to reduce the use of toxics in schools. This policy should provide a set of criteria governing the selection of products and supplies used in schools. Such a policy would dictate the use of non-toxic or least toxic office and classroom supplies, maintenance and cleaning chemicals, building equipment and materials and furnishings and floorings. Just as there are standards to prevent fires and other safety hazards, so too should there be standards to prevent toxic chemical exposure.

Safe Materials List and Coordinated School Purchasing

The Department of Education in cooperation with the Department of Health should develop a Safe Materials List that includes non-toxic or least toxic office and classroom supplies, maintenance and cleaning chemicals, building equipment and materials and furnishings. This list should be updated and disseminated to school administrators and Healthy School Coordinators at least twice yearly. In addition, the Department of Education should develop a buying cooperative so that schools may acquire items on the Safe Materials List at the least cost.

Phase-out of Pesticide Use and Integrated Pest Management

By the year 2002 all Vermont schools should eliminate the use of pesticides. In the interim, schools should implement Integrated Pest Management (IPM) policies.
IPM presents an alternative pest control strategy to traditional pesticide-based solutions. In its simplest form, IPM seeks to control pests through an understanding of pest ecology.

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> The IPM approach begins with steps to accurately diagnose the nature and source of pest problems, and then relies on a range of preventative tactics and biological controls to keep pest populations within acceptable limits. Reduced risk pesticides are used if other tactics have not been adequately effective as a last resort.[31]

The National PTA officially states that [IPM] is an excellent long-term solution for control of pests that significantly lower children's exposure to harmful chemicals by using the least-toxic mix of pest control strategies.[32]

IPM programs have been successfully working in schools throughout the United States including:

- Dade County, Florida (the fourth largest school system in the nation): Schools are implementing IPM with the goal of eliminating all pesticide use in its public schools.[33]
- Lexington County, Massachusetts: Schools have used pesticides only once since their adoption of IPM in 1990. This is compared to monthly spraying previous to adopting the policy.[34]
- Montgomery County, Maryland: Schools have adopted IPM and have reduced their pesticide use by 90 percent in only two years.[35]

Healthy Schools Ombudsperson

The Department of Health should appoint a Healthy Schools Ombudsperson to: distribute information regarding toxic chemical exposure to school occupants and parents; facilitate communication between school occupants and parents and school officials; and provide technical assistance to school officials as they work to address indoor air quality and toxic chemical exposure complaints.

Healthy School Coordinator

Schools should assign a Healthy School Coordinator to instill toxic chemical exposure awareness among school occupants and the community as well as facilitate their communications. The Coordinator should be responsible for developing a Healthy School Management Plan for the school that:

- prioritizes prevention of toxic chemical exposure;
- includes mechanisms to resolve toxic chemical exposure problems as they occur;
- provides means to communicate school environmental health status to building occupants and parents; and
- provides policies for emergency response.

Assessment of School Practices

The Healthy School Coordinator should each year assess the school building and grounds to:

- identify potential sources of toxic chemical exposure;
- evaluate building design and ventilation systems;
- identify potential sources of environmental pollution in the school; and

- make recommendations on how to alleviate any problems.

If the Coordinator, a school official or a community member believe this assessment to be inaccurate or incomplete, then they can request that the Department of Education further investigate the environmental health of the school.

Actions of Policy Makers, School Officials, Parents and Teachers

To correct the problem of toxic chemical exposure in schools, school officials, state policymakers, parents, teachers and students must become active in reducing the use of toxic products.

State Legislators must:

✓ Pass legislation incorporating the policy recommendations outlined in this report and appropriate money to the Departments of Education and Health to pay for these policy changes.

School Officials must immediately:

✓ Keep thorough records of all pesticides and toxic maintenance chemical use.
✓ Adopt an IPM policy that prioritizes pest prevention and non-toxic methods of pest control.
✓ Give advance notification to school occupants and parents if any pesticides are to be used in the school or on the school grounds.

Parents, Teachers and Students should:

✓ Request information about pesticide and maintenance chemical use in schools.
✓ Insist on receiving prior notification of pesticide use.
✓ Advocate for a school policy to replace toxic chemicals with non-toxic alternatives.
✓ Monitor the decision making process for using pesticides.

6. VPIRG Healthy Schools Resource Center

In January of 1999 VPIRG created a Healthy Schools Resource Center to act as a clearinghouse for information on toxic chemical exposure and Indoor Air Quality (or IAQ) in schools. To find out more about more about the Center or to request a visit by a VPIRG representative for your school, please contact VPIRG's Montpelier office.

Appendix 1

Methodology and Survey

In May 1998, VPIRG sent a School Pesticide & Maintenance Chemical Use Questionnaire to ten schools in each of Vermont's 13 counties. Schools were selected in part to represent a diversity of ages (e.g. K-5, 5- 8, 8-12) and number of students. Each school was contacted twice by telephone in an effort to receive their survey.

School Pesticide & Maintenance Chemical Use Questionnaire

The purpose of this questionnaire is to gather information on policies and practices regarding the use of pesticides and maintenance chemicals. If you need additional space to answer a question, please attach a separate sheet of paper. If you have any questions about the survey, please call Peter Sterling at (802) 223-5221.

School name and address:

Name & title of person filling out this questionnaire:

PESTICIDES

1. Does your school have a written ***pesticide***[1] use policy? ❑ Yes ❑ No If so, please attach a copy.

2. Is **pest**[2] control: Contracted out to a private company? ❑ Yes ❑ No
An in-house function? ❑ Yes ❑ No Please explain:

3. Are pesticide applications: Done on a fixed schedule ❑ Yes ❑ No
Only when a pest problem is present? ❑ Yes ❑ No

4. What time of day and week are applications made?
5. Are treated areas posted before applications? ❑ Yes ❑ No
6. Are treated areas posted after applications? ❑ Yes ❑ No

7. If areas are posted, for how long?

8. If pesticides are used, what kind of records are kept of applications?

9. Are non-chemical alternatives to pesticides available? ❑ Yes ❑ No For which pests and sites?

10. If pesticides are used, does your school have a notification policy for parents? ❑ Yes ❑ No Please explain:

11. Is there an appeals process if parents or teachers wish to challenge proposed use of a pesticide? ❑ Yes ❑ No

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[1] **Pesticides** includes insecticides, herbicides (weed-killers), fungicides, rodenticides, wood preservatives, soil sterilants, certain baits and lures, disinfectants and other products licensed to kill, control or repel living organisms.

[2] **Pests** include: Weeds, fleas, head lice, house flies, fruit flies, meal moths, cockroaches, ants stinging insects (yellowjackets, bees, wasps, mosquitos), aphids, wood destroying insects (termites, carpenter ants and more), and other insects; spiders; moss; fungus; mold and mildew; bacteria; birds; rodents; plant diseases; and more.

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Please fill out the following chart with the product name and amount of each PESTICIDE used in the past year. Please include any chemicals used in interior/structural settings, as well as in outdoor/landscape settings.

Pesticides Used: Brand Name & EPA registration #	Active Ingredients	Area of School or School Grounds Treated	Frequency of Application to that Area	Total Amount of Pesticide Applied in Year

MAINTENANCE SUPPLIES AND PRODUCTS

1. Does your school use any non-toxic maintenance products[3]? ❑ Yes ❑ No

2. If so, which ones?

3. Are any children in your school known to be especially sensitive to chemical exposure? ❑ Yes ❑ No

4. Does your school take measures to identify, notify and protect these children if toxic chemicals are used at school? ❑ Yes ❑ No Please explain:

5. Does your school have Material Safety Data Sheets (MSDSs) for all pesticides and maintenance chemicals used on file and available to parents, teachers, and staff? ❑ Yes ❑ No

6. Does your school have a policy encouraging the use of non-toxic maintenance supplies? ❑ Yes ❑ No If so, please attach a copy

7. Has your school made any efforts to use non-toxic maintenance supplies? ❑ Yes ❑ No If so, please explain:

8. Would your school be willing to use non-toxic maintenance supplies if available to you at a competitive price? ❑ Yes ❑ No

Please fill out the following chart with the product name and amount of each MAINTENANCE PRODUCT used in the past year. Please include any chemicals used in interior/structural settings, as well as in outdoor/landscape settings.

Maintenance Product Used	Active Ingredients	Area of School or School Ground Where Used	Frequency of Use in that Area	Total Amount of Product Used in Year

[3] **Maintenance products** include cleaners, disinfectants, drain cleaner, floor and furniture polish, scouring powder, rug and upholstery cleaners, toilet cleaners and window cleaners.

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Please mail this survey to VPIRG at 64 Main St., Montpelier, VT 05602.

Appendix 2

Recommendations Adopted by the New York State Board of Regents for Implementation by the State Education Department

✓Schools shall adopt and publicize integrated pest management policies and practices to prevent, reduce, or eliminate pesticide use. When pesticides are deemed essential, the less-toxic alternative shall be selected.

✓Schools shall select pest management practicers which minimize exposure of individuals to pesticides.

✓Schools shall post warning signs at the main entrance of the school, and elsewhere as required by law, whenever pesticides are applied, indoors or outdoors, and shall leave the warning signs in place for at least 48 hours following the pesticide application.

✓Schools shall maintain, and make available to parents and school personnel, records of all pesticide applications, including the pesticide(s) applied, the date(s) of application (s), and the location(s) treated.

Appendix 3: Resources for Further Information

Organizations:

Northwest Coalition for Alternatives to Pesticides (NCAP)
PO Box 1393, Eugene, OR 97440 Telephone: 541-344-5044

NCAP has worked extensively on reducing pesticides in schools in the Pacific Northwest and publish a quarterly newsletter called *Journal of Pesticide Reform.* Two relevant reports are *A Successful School Organizing Example* (1997) and *Getting Pesticides Out of Our Schools* (1994).

New York Coalition for Alternatives to Pesticides (NYCAP)
353 Hamilton St., Albany, NY 518-426-8246

In 1996, NYCAP prepared four manuals on pesticides and schools: *IPM for Schools, Quick Guide to the Who, What, Where, Why, When and How of IPM for Schools, A Model Pest Management Plan and Policy for Schools and IPM Resources for Schools.*

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National Coalition Against the Misuse of Pesticides (NCAMP)
701 E Street, SE, Suite 200, Washington DC 20002, Telephone: 202-543-5450

NCAMP provides information on specific pesticides and pesticide policy. They publish a monthly newsletter *Pesticides and You* and offer *Pesticides and Schools: A collection of Issues and Articles.*

Publications:

Pesticides in Schools: Reducing the Risks (1993)
NYS Department of Law, 120 Broadway, NY, NY 10271, 212-416-8446

Failing Health: Pesticides in California Schools (1997)
CALPIRG Charitable Trust, 450 Geary St., Suite 500,
San Francisco, CA 94102, 415-292-1487

Primary Exposure: Pesticides in Massachusetts Schools (1996).
MASSPIRG Education Fund, 29 Temple Place, Boston, MA 02111, 619-235-0281

Reducing Pesticide Use in Schools: An Organizing Manual (1997)
Pesticide Watch Education Fund, 450 Geary St., Suite 500,
San Francisco, CA 94102, 415-292-1486

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